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CHENG ET AL.

YOR920000622US1

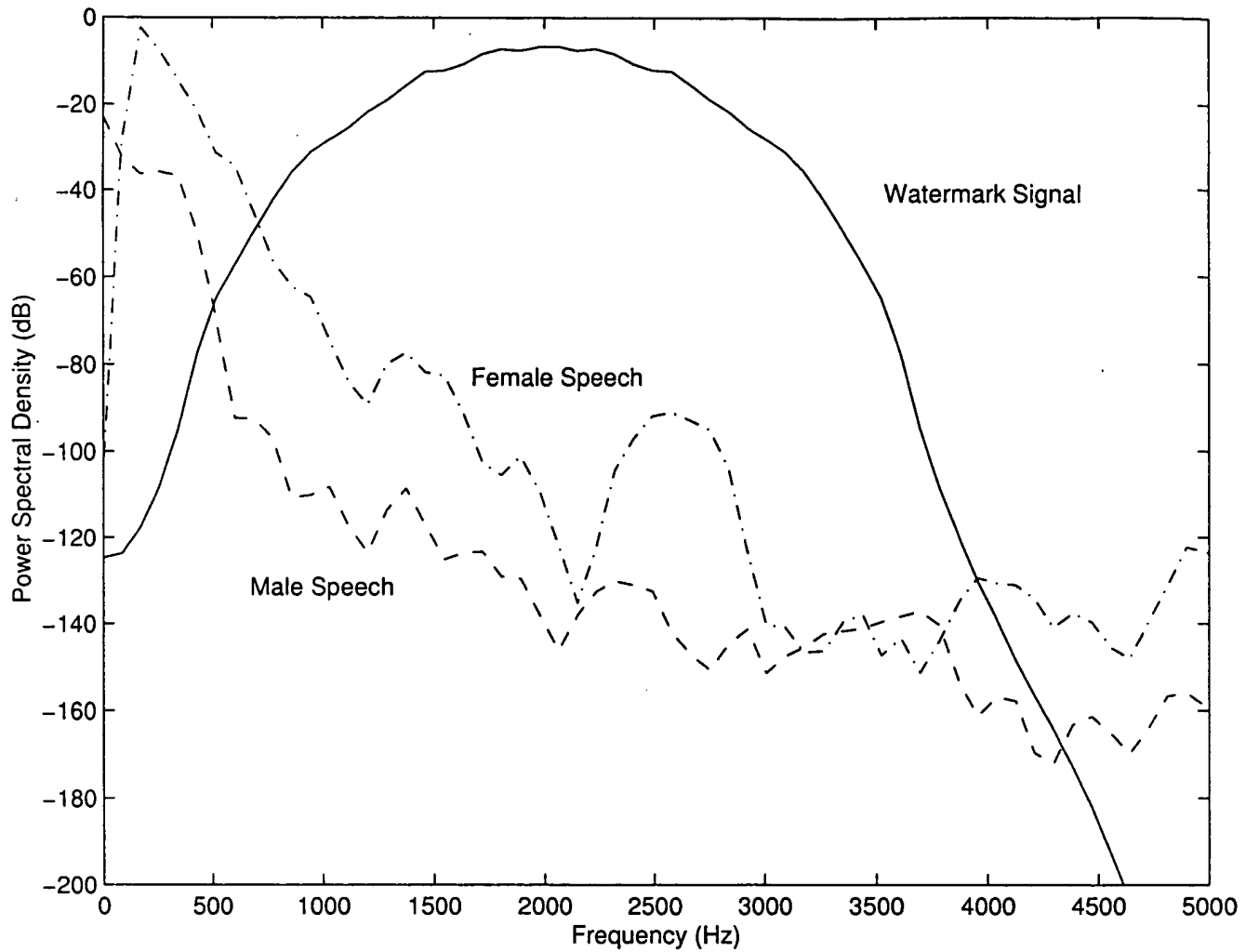


FIG. 1

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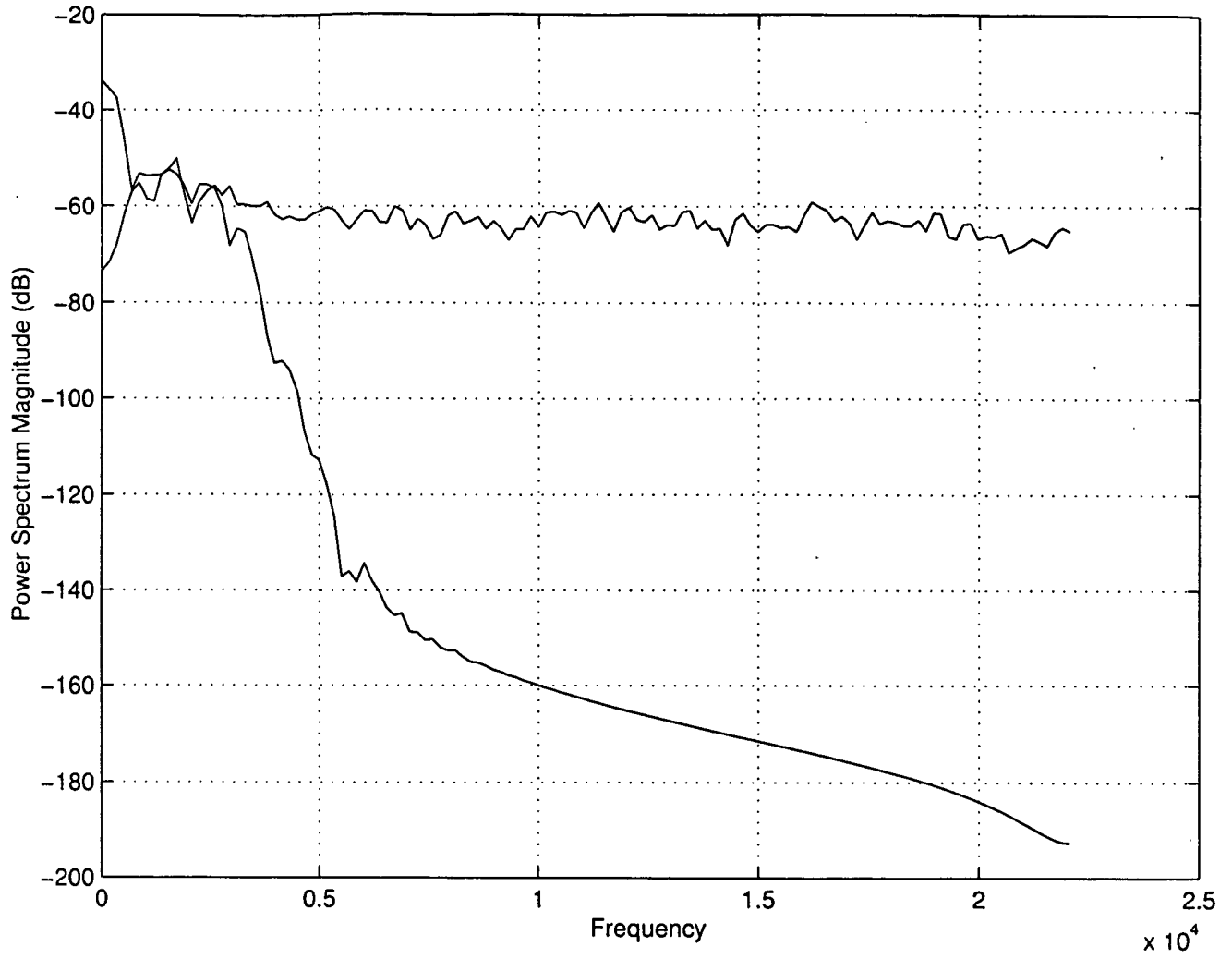
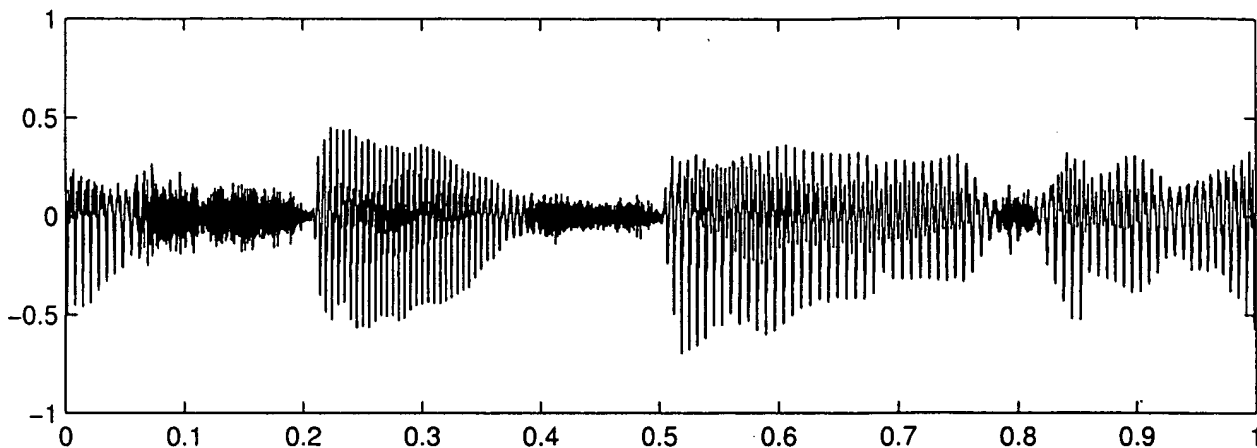


FIG. 2

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Y0R9200006220S1

(A)



(B)

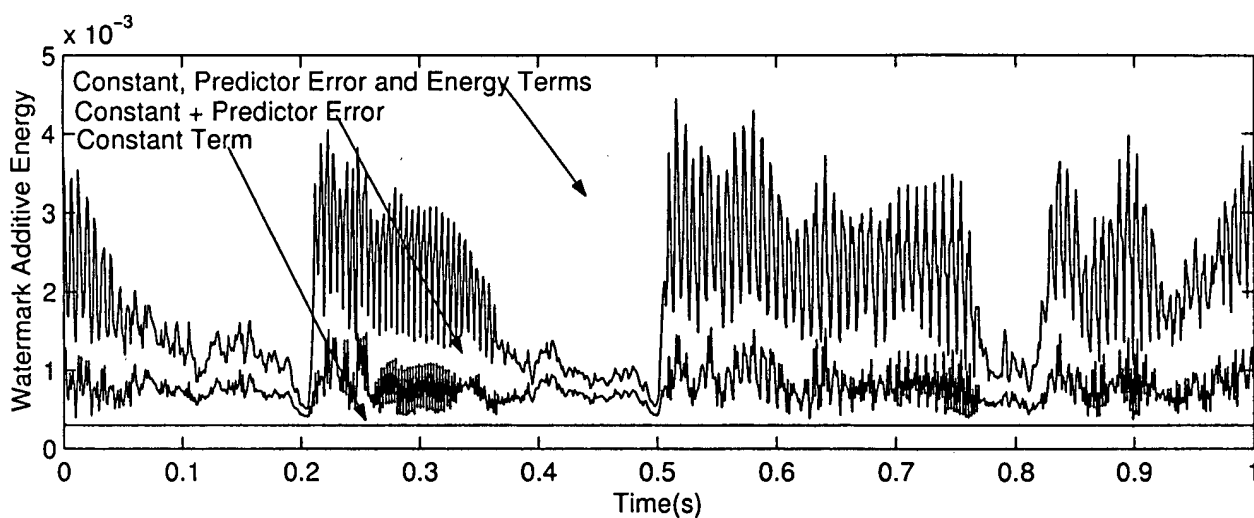


FIG. 3

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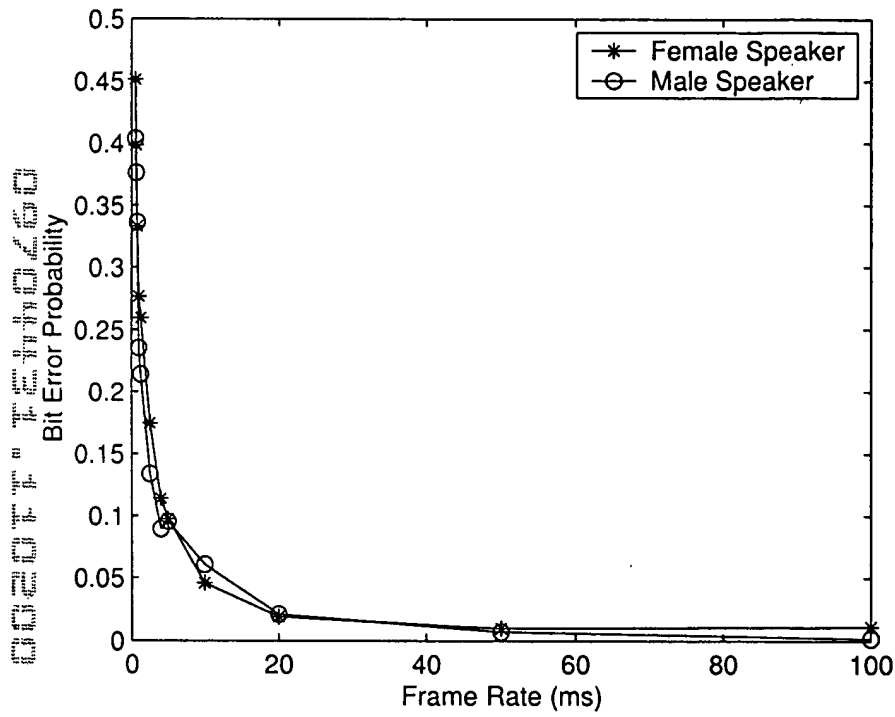


FIG. 4A

YBR92000622US1



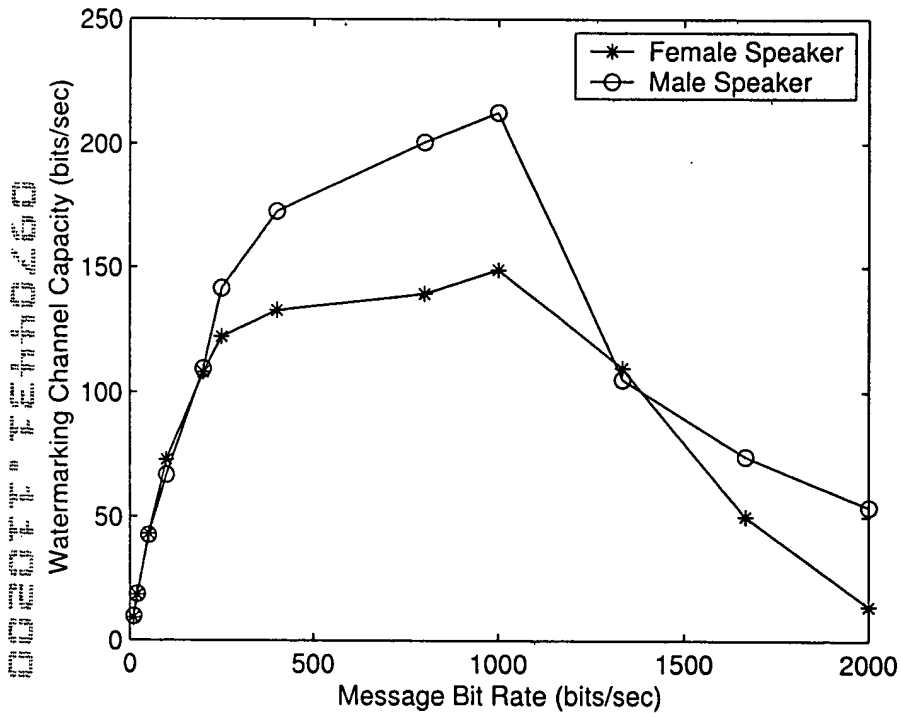


FIG. 5

Compression Scheme	Speech Bandwidth	Speech Bit Rate	Watermark Bit Reliability
16 bit linear PCM	22 kHz	706 kbps	74.05%
16 bit linear PCM	4 kHz	128 kbps	71.58%
IMA ADPCM	4 kHz	32 kbps	68.65%
GSM 6.10	4 kHz	13 kbps	61.23%

FIG. 6

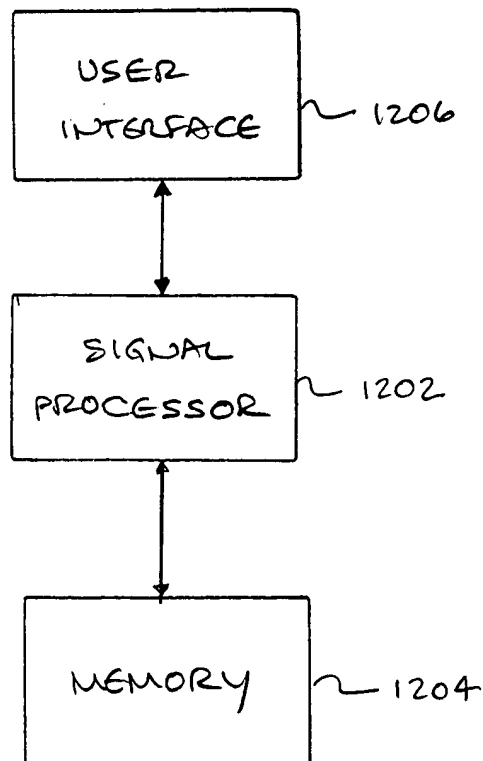


FIG. 12

700 ~

720 ~
WATERMARKED
SPEECH

702 ~
DIGITAL
MESSAGE

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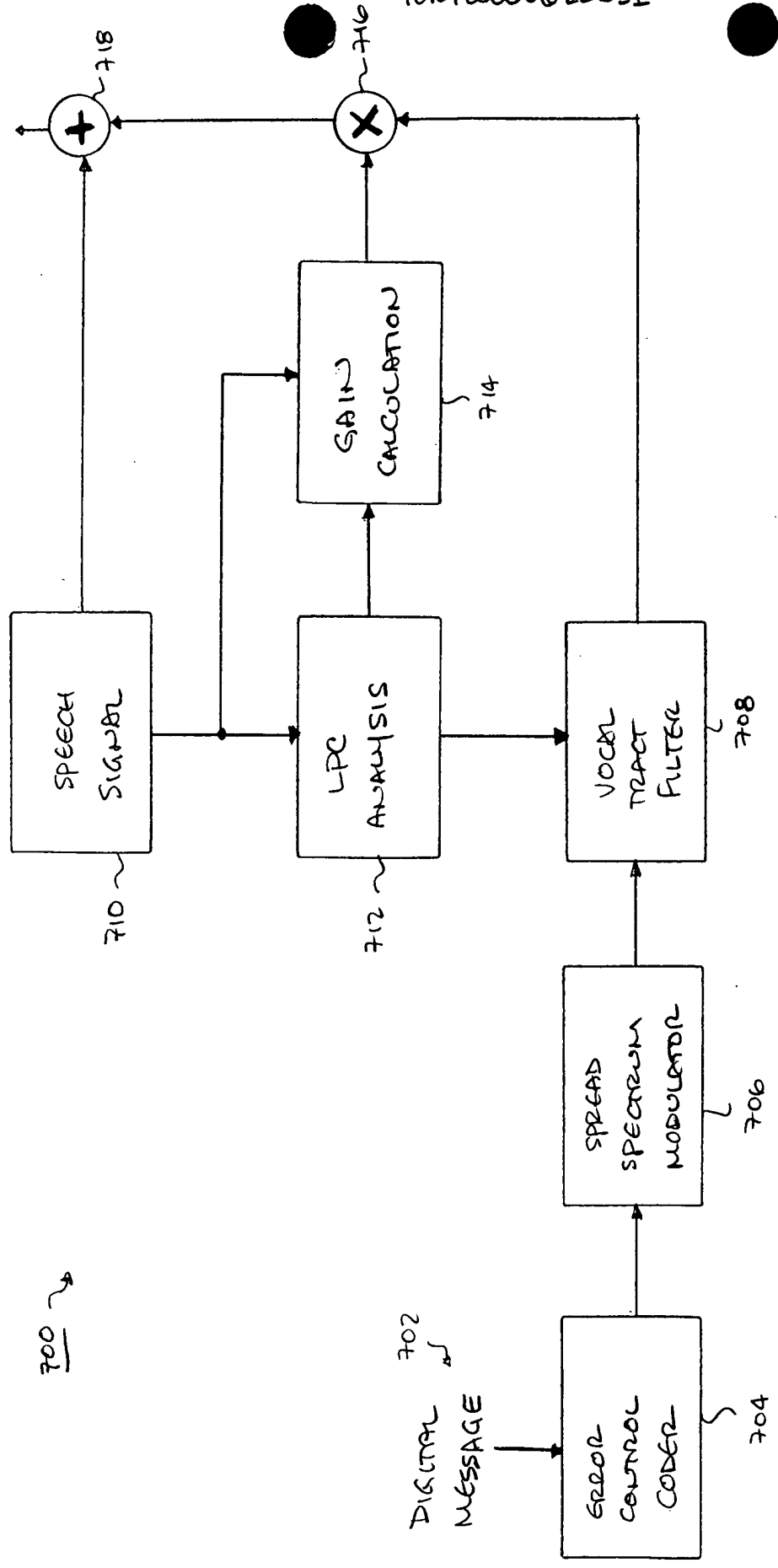


FIG. 7

FIG. 9

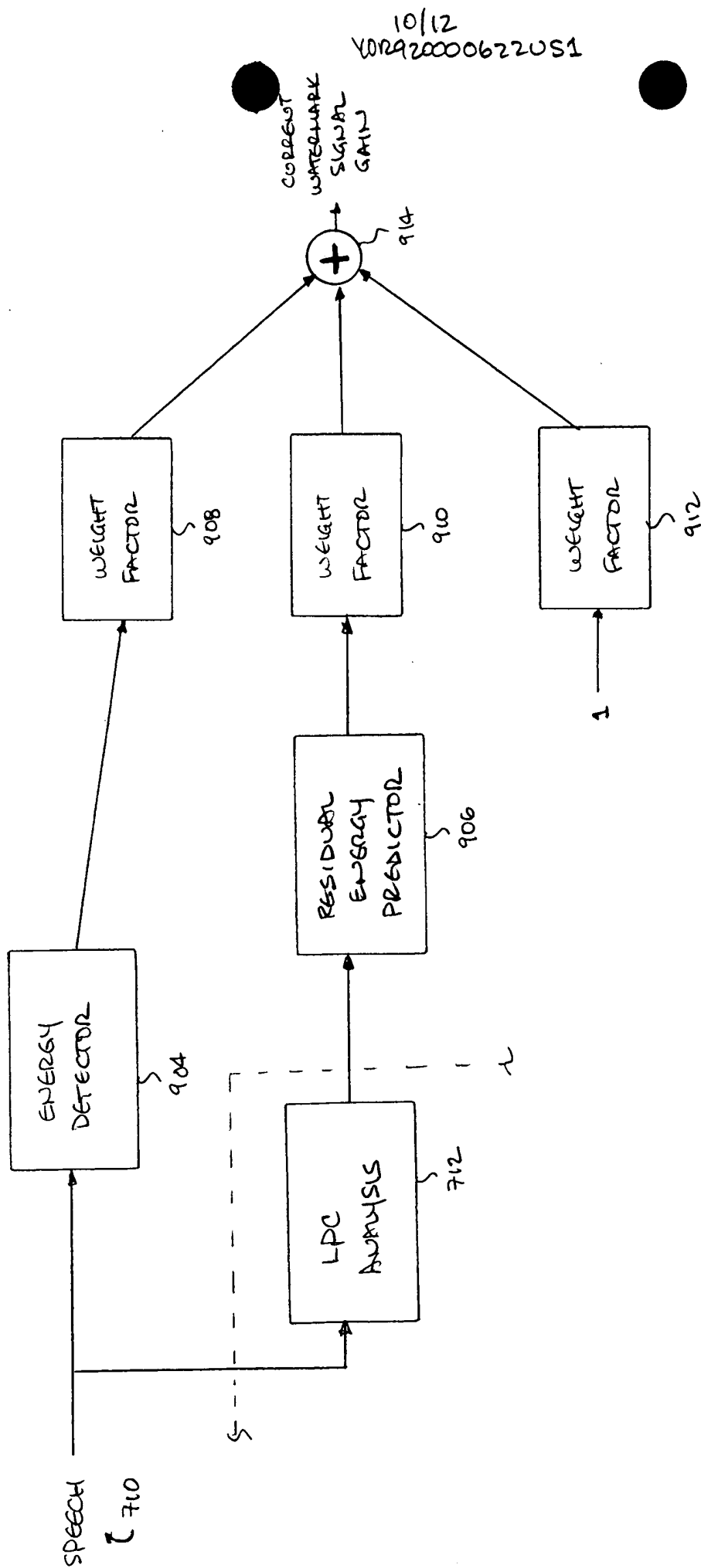


FIG. 9

CODED TELEPHONE

1000

720

WATERMARKED
SPEECH

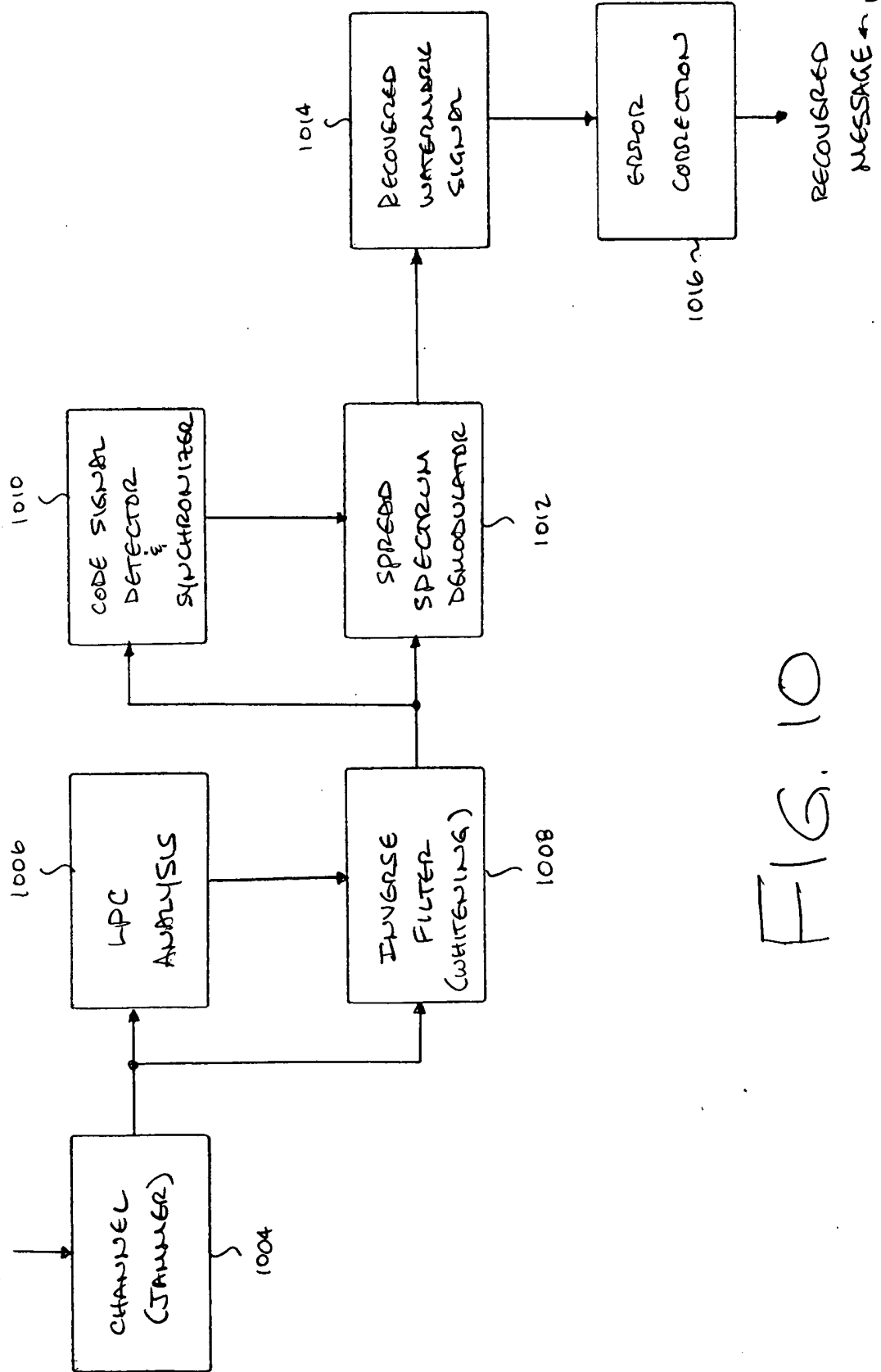


FIG. 10

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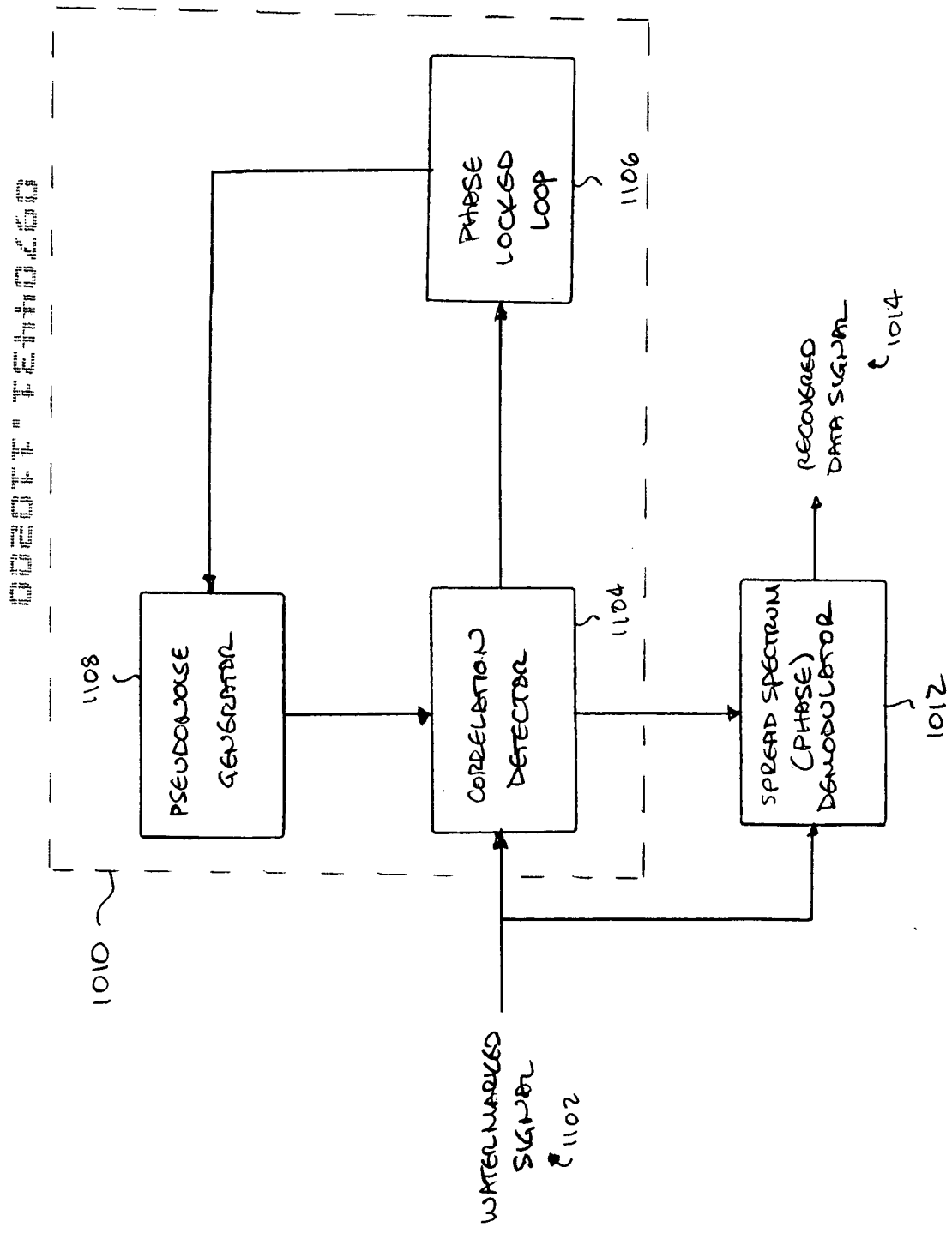


FIG. 11